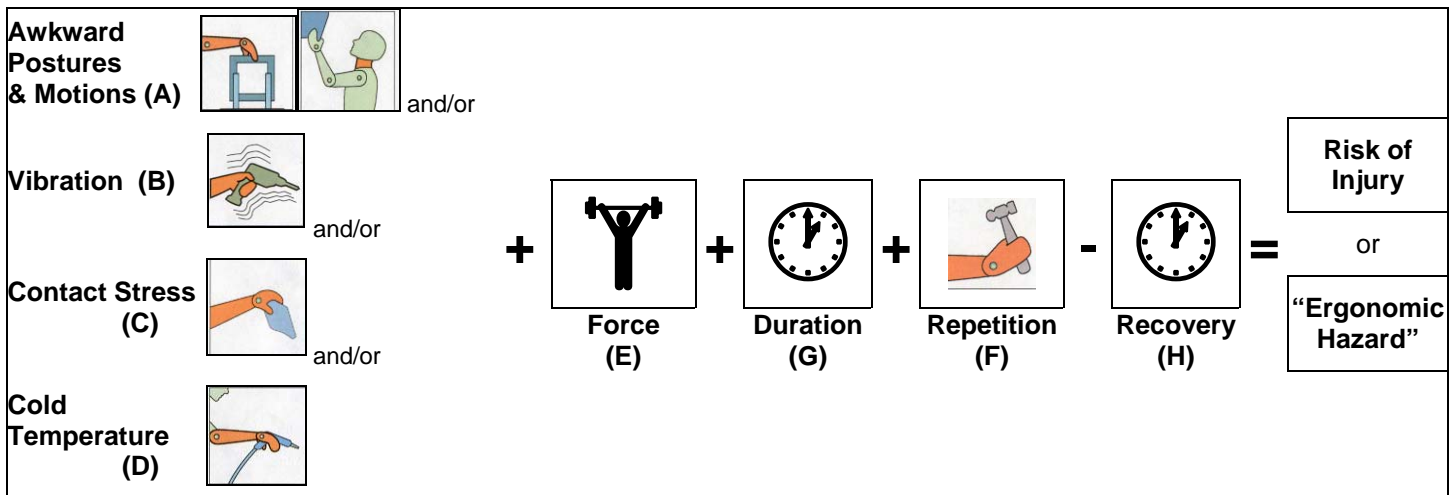


APPENDIX A

Ergonomic Risk Factors Examples [Non-Mandatory]

1. Ergonomic risk factors are characteristics of a job that contribute to creation of ergonomic hazards that may negatively impact job performance including quality, productivity, as well as worker health.
2. Work-related **Risk Factors** are present at varying levels for different jobs and tasks. The mere presence of a risk factor does not necessarily mean that an employee performing a job is at undue risk of injury. Generally, the greater the exposure is to a single risk factor or combination of risk factors, the greater the probability of a musculoskeletal disorder.












Table 1
Assessment Formula/Process

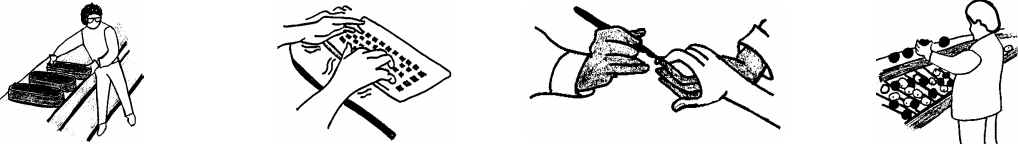
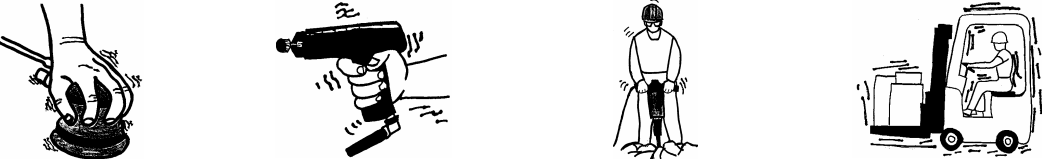




3. For job assessment of ergonomic risk factors consider the following:

A. Awkward postures and motions	C. Contact stress	E. Forceful exertions
B. Vibration	D. Cold temperature	F. Repetition

Table 2
Risk Factor Descriptions With Examples

A. Awkward Postures and Motions	<p>Posture is the position your body is in that affects muscle groups involved in physical activity. Awkward postures and motions include repeated or prolonged reaching, twisting, bending, kneeling, squatting, working overhead with your hands or arms, or holding fixed positions.</p> <div style="text-align: center;">        </div>
B. Forceful Exertions	<p>Force is the amount of physical effort required to perform a task such as heavy lifting, or to maintain control of equipment or tools. The amount of force exerted depends on the type of grip, the weight of an object, body posture, the type of activity and the duration of the task. Examples include: tasks involving gripping, lifting, pushing, pulling, holding, assembling, connecting, using a hand tool, and maintaining control of a powered tool.</p> <div style="text-align: center;">     </div>

C. Repetition	<p>A motion or activity that is repeated over and over again.</p> 
D. Vibration	<p>Operating vibrating tools such as sanders, grinders, chippers, routers, drills, chain saws and other saws, jackhammers, or sitting/standing on vibrating surfaces such as driving a truck.</p> 
E. Contact Stress	<p>Resting or pressing body parts against a hard surface or sharp edge can result in compression of nerves, muscles, tendons, blood vessels and other tissues. Examples include: pounding with the palm of hand; tools digging into the palm of hand; tools digging into the sides of fingers; resting the knee, elbow, forearm, or wrist on a hard surface or sharp edge.</p> 
F. Cold Temperature	<p>Exposure to low temperatures. Examples include: work involving the handling of frozen or refrigerated materials, the immersion of body parts in cold media, or the exposure to cold air exhaust. Also including gripping cold objects, cold work environments, and air-powered tool exhaust directed to hands and face.</p> 

4. Risk factors may be evaluated by the following exposure properties:

G. Duration
H. Recovery
I. Magnitude

Table 3

Exposure Properties Descriptions with Examples

G. Duration	A period of time over which one is exposed to risk factors or the period of time considered as recovery.
H. Recovery	Periods of reduced exposure to risk factors. Examples include: formal rest breaks, pauses in work activity, or other job duties/tasks that provide specific body parts the opportunity to rest.
I. Magnitude	The amount of each risk factor involved. Examples include: the amount of force applied, the angle/position of the back or the repetition rate.

APPENDIX B

Other Resources Available by Industry [Non-Mandatory]

State and Federal Assistance

MIOSHA – CET	www.
OSHA	www.
NIOSH	www.

Industry Assistance

Hospitals		
	Michigan Health & Hospital Association (MHA)	www.
	Health Care Association of Michigan (HCAM)	www.
Nursing Homes		
	Michigan Association of Homes & Services for the Aging (MAHSA)	www
General Manufacturing		
	Ford Motor Company	www.
	Dow Chemical Company	www.
	Delphi	www.
	Daimler-Chrysler	www.
	Michigan Manufacturers Association (MMA)	www.
	Society of the Plastics Industry Inc	www.
Office		
	Blue Cross-Blue Shield of Michigan	www.
	Haworth, Inc	www.
General Industry		
	Michigan Chamber of Commerce	www.
	Consumers Energy	www.

Union Assistance

UAW – United Auto Workers International Union	www.
AFL-CIO – The American Federation of Labor and Congress of Industrial Organizations	www.
UFCW – United Food & Commercial Workers	www.
SEIU – Service Employees International Union	www.
PACE – Paper-Allied Industry-Chemical-Energy Workers Union	www.
General Teamster Union	www.

University Assistance

University of Michigan – Center for Ergonomics	www.
Western Michigan University	www.